

## WHAT IS CLAIMED IS:

1. An optical window assembly comprising:

- (a) an outer window;
- (b) an inner window; and

2. The optical window assembly of claim 1, wherein said outer window includes an outer surface facing away from said inner window and an inner surface facing towards said inner window, wherein said inner window includes an outer

(c) a housing, wherein said outer window and said inner window are mounted, said housing holding said outer window and said inner window apart, thereby forming an intervening space between said outer window and said inner window.

surface facing towards said outer window and an inner surface facing away from said outer window, and wherein at least one of said surfaces is coated with an optical coating that is substantially transparent in at least one wavelength band selected from the group consisting of visible wavelength bands and infrared wavelength bands and that is substantially opaque to electromagnetic radiation of radio and radar frequencies.

3. The optical window assembly of ~~claim~~ <sup>claim</sup> 2, wherein said inner surface of said inner window is coated with said optical coating.

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4. The optical window assembly of claim 2, wherein said optical coating is electrically conductive.

5. The optical window assembly of claim 2, wherein said optical coating includes at least one material selected from the group consisting of doped gallium arsenide and doped germanium.

6. The optical window assembly of claim 1, wherein said outer window includes an outer surface facing away from said inner window and an inner surface facing towards said inner window, wherein said inner window includes an outer surface facing towards said outer window and an inner surface facing away from said outer window, and wherein at least one of said surfaces is coated with an anti-reflective coating.

7. The optical window assembly of claim 6, wherein said outer surface of said outer window, said inner surface of said outer window and said outer surface of said inner window are coated with said anti-reflective coating.

8. The optical window assembly of claim 6, wherein said anti-reflective coating is heat resistant.

9. The optical window assembly of claim 1, wherein said intervening space is occupied by a vacuum.

10. The optical window assembly of claim 1, wherein said intervening space is occupied by a thermally insulating substance.

11. The optical window assembly of claim 10, wherein said thermally insulating substance is a gas.

12. The optical window assembly of claim 1, wherein said intervening space is occupied by a coolant.

13. The optical window assembly of claim 1, wherein said windows are planar.

14. The optical window assembly of claim 1, wherein said windows are curved.

15. An electro-optical detection system comprising:

- (a) an electro-optical payload; and
- (b) an optical window assembly, for passing, to said electro-optical payload, electromagnetic radiation in at least one wavelength band selected from the group consisting of visible wavelength bands and infrared wavelength bands, while blocking electromagnetic radiation of radio and radar frequencies, said optical window assembly including:
  - (i) an outer window,
  - (ii) an inner window, and

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- (iii) a housing, wherein said outer window and said inner window are mounted, said housing holding said outer window and said inner window apart, thereby forming an intervening space between said outer window and said inner window.

16. The electro-optical detection system of claim 15, wherein said outer window includes an outer surface facing away from said inner window and an inner surface facing towards said inner window, wherein said inner window includes an outer surface facing towards said outer window and an inner surface facing away from said outer window, and wherein at least one of said surfaces is coated with an optical coating that is substantially transparent in at least one of said wavelength bands and that is substantially opaque to said electromagnetic radiation of radio and radar frequencies.

17. The electro-optical detection system of claim 16, wherein said inner surface of said inner window is coated with said optical coating.

18. The electro-optical detection system of claim 15, wherein said intervening space is occupied by a vacuum.

19. The electro-optical detection system of claim 15, wherein said intervening space is occupied by a thermally insulating substance.

20. The electro-optical detection system of claim 15, wherein said intervening space is occupied by a coolant, the electro-optical detection system further

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comprising:

- (c) a mechanism for circulating said coolant through said intervening space.

21. The electro-optical detection system of claim 15, wherein said electro-optical payload includes:

- (i) an array of photosensitive elements, and
- (ii) a focusing component for focusing said electromagnetic radiation in said at least one wavelength band onto said array.

22. A mobile platform comprising:

- (a) an electro-optical detection system including:
  - (i) an optical window assembly, for admitting to the mobile platform electromagnetic radiation in at least one wavelength band selected from the group consisting of visible wavelength bands and infrared wavelength bands, while blocking electromagnetic radiation of radio and radar frequencies, said optical window assembly including:
    - (A) an outer window,
    - (B) an inner window, and
    - (C) a housing, wherein said outer window and said inner window are mounted, said housing holding said outer window and said inner window apart, thereby forming an intervening space between said outer window and said inner window.

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23. The mobile platform of claim 22, wherein said electro-optical detection system further includes:

- (ii) an electro-optical payload for receiving said electromagnetic radiation in said at least one wavelength band.

24. The mobile platform of claim 23, wherein said electro-optical payload includes:

- (A) an array of photosensitive elements, and
- (B) a focusing component for focusing said electromagnetic radiation in said at least one wavelength band onto said array.

25. The mobile platform of claim 22, wherein said outer window includes an outer surface facing away from said inner window and an inner surface facing towards said inner window, wherein said inner window includes an outer surface facing towards said outer window and an inner surface facing away from said outer window, and wherein at least one of said surfaces is coated with an optical coating that is substantially transparent in at least one of said wavelength bands and that is substantially opaque to said electromagnetic radiation of radio and radar frequencies.

26. The mobile platform of claim 25, wherein said inner surface of said inner window is coated with said optical coating.

27. The mobile platform of claim 22, further comprising:

- (b) a fuselage;

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and wherein said outer window includes an outer surface that is substantially flush with said fuselage.

28. The mobile platform of claim 22, further comprising:

(b) a mechanism for propelling the platform at a supersonic speed.

29. A method of detecting, from within a platform moving at a supersonic speed, electromagnetic radiation in at least one wavelength band selected from the group consisting of visible wavelength bands and infrared wavelength bands, comprising the steps of:

- (a) providing the platform with an inner window that is transparent in the at least one wavelength band; and
- (b) thermally insulating said inner window, from an atmosphere external to the platform, in a manner that allows the electromagnetic radiation to reach said inner window.

30. The method of claim 29, wherein said inner window includes an outer surface and an inner surface, at least one of said surfaces being coated with an optical coating that is substantially transparent in the at least one wavelength band and that is substantially opaque to electromagnetic radiation of radio and radar frequencies.

31. The method of claim 30, wherein said inner surface is coated with said optical coating.

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32. The method of claim 29, wherein said insulating is effected by steps including incorporating said inner window in an optical window assembly that further includes:

- (i) an outer window between said external atmosphere and said inner window, and
- (ii) a housing, wherein said outer window and said inner window are mounted, said housing holding said outer window and said inner window apart, thereby forming an intervening space between said outer window and said inner window.

33. The method of claim 32, wherein said outer window includes an outer surface facing towards said external atmosphere and an inner surface facing towards said inner window, wherein said inner window includes an outer surface facing towards said outer window and an inner surface facing away from said outer window, and wherein at least one of said surfaces is coated with an optical coating that is substantially transparent in the at least one wavelength band and that is substantially opaque to said electromagnetic radiation of radio and radar frequencies.

34. The method of claim 33, wherein said inner surface of said inner window is coated with said optical coating.

35. The method of claim 32, wherein said insulating is effected by steps further including providing a vacuum in said intervening space.

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36. The method of claim 32, wherein said insulating is effected by steps further including providing a thermally insulating substance in said intervening space.

37. The method of claim 32, wherein said insulating is effected by steps further including circulating a coolant through said intervening space.

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